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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,545	08/30/2001	Peter Betz	IN-5516	7926
26922	7590	01/28/2004	EXAMINER	
BASF CORPORATION ANNE GERRY SABOURIN 26701 TELEGRAPH ROAD SOUTHFIELD, MI 48034-2442			FLETCHER III, WILLIAM P	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,545

Applicant(s)

BETZ ET AL. 

Examiner

William P. Fletcher III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 17-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 17-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8/30/2001. 6) ☐ Other: _____

DETAILED ACTION***Specification***

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1-13 and 17-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

3. The term "substantially free of acid groups" in claim 1 is a relative term which renders the claim indefinite. The term "substantially free of acid groups" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

It is unclear just how many acid groups components (a1) and (a2) may contain to still be considered "substantially free of acid groups." While the term is inclusive of components completely free of acid groups, it is also inclusive of components with some acid groups. The maximum number of permissible acid groups is not disclosed in the specification, nor the standard by which one of ordinary skill in the art may make such a determination.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 1-13 and 17-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,385,988 A (Yamamoto et al.) in view of US 5,973,068 A (Yamaya et al.) and *vice versa*.**

With respect to claims 1, 5, 6, 8, and 20-32:

Reference 988 teaches a composite coating composition obtained by polymerizing a radical-polymerizable vinyl compound in the presence of a polycondensate formed by hydrolysis and polycondensation of at least one alkoxysilane compound of the general formula $\text{SiR}^1_a\text{R}^2_b(\text{OR}^3)_c$ (abstract, 1:50-68, and 3:3-5:62). This satisfies applicant's formula I because R^1 and R^2 are non-hydrolyzable hydrocarbon groups while R^3 may be hydrogen or a hydrocarbon group, making the OR^3 either a hydroxyl or hydrolysable alkoxy group (1:50-68 and 3:3-5:62). The alkoxysilane may be used in combination with a compound co-condensable therewith, including metal alkoxides and metal chelates (5:63-6:3). Specific examples include: titanium tetraethoxide, titanium tetraisopropoxide, zirconium tetraethoxide, zirconium tetra-*n*-butoxide, and aluminum triisopropoxide (6:7-12). These compounds satisfy applicant's claimed formula II.

Reference 068 teaches a composite coating composition obtained by polymerizing a solution containing a radical polymerizable vinyl monomer and a silicone resin and formed by hydrolysis and polycondensation of at least one hydrolysable silane of the general formula $\text{R}^1_m\text{R}^2_n\text{Si}(\text{OH})_p(\text{OX})_q\text{O}_{(4-m-n-p-q)/2}$ (abstract and 3:49-7:20). This satisfies applicant's formula I

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because R^1 and R^2 are non-hydrolyzable hydrocarbon groups, OH is a hydroxyl group, and OX is a hydrolysable group (4:5-18). The radical polymerizable vinyl monomers may be combinations of two or more (meth)acrylic esters (10:38-42, a), ethylenically unsaturated monomers containing hydroxyl groups (10:44-46, c and 53-55, f), and ethylenically unsaturated monomer containing acid groups (10:42-44, b). Since applicant has not disclosed the maximum permissible number of acid groups and since this reference explicitly recites acid groups when they are present, it is the examiner's position that, absent evidence to the contrary, the (meth)acrylic ester and hydroxyl-containing ethylenically unsaturated monomers of this reference are inclusive of and read on being "substantially free of acid groups."

While reference 988 teaches vinyl monomers that individually meet the limitations of applicant's components (a1)-(a3), this reference does not teach an acrylate copolymer solution that that is the reaction product of (a1)-(a3). As noted above, 068 teaches a similar composite coating composition in which the radical polymerizable vinyl monomers for just such a reaction product. Since both references are drawn to composite coating compositions containing radical polymerizable vinyl monomers and hydrolysable silanes, it would have been obvious to one of ordinary skill in the art to modify the method of reference 988 so as to utilize, as the radical polymerizable vinyl monomers, those taught by reference 068. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of successfully forming a composite coating composition.

Further, reference 068 teaches all the limitations of this claim except that the silane is hydrolyzed, condensed, and complexed with the hydrolysable metal compound of applicant's formula II. As noted above, reference 988 teaches a similar composite coating composition in

which the silane is hydrolyzed, condensed, and complexed with metal alkoxides or chelates satisfying applicant's formula II. Since both references are drawn to composite coating compositions containing radical polymerizable vinyl monomers and hydrolysable silanes, it would have been obvious to one of ordinary skill in the art to modify the method of reference 068 so as to further include those metal alkoxides or chelates taught by reference 988. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of successfully forming a composite coating composition.

With respect to claims 2, 20, and 25, neither reference requires the presence of aromatics in the composite coating compositions.

With respect to claims 3, 20, and 25, reference 988 teaches the relative amounts claimed by applicant (6:3-6 and 7:30-46).

With respect to claims 4, 20, and 25, neither reference explicitly teaches the solids content claimed. It is the examiner's position that solids content is a result-effective variable effecting properties of the coating such as viscosity. Absent evidence of unexpected results demonstrating the criticality of the claimed solids content, it would have been obvious to one of ordinary skill in the art to modify the method of reference 988 in view of reference 068, and *vice versa*, so as to optimize this result-effective variable by routine experimentation (see MPEP § 2144.05(II)).

With respect to claims 7, 19, and 21-26 reference 988 teaches that R^{1-2} may contain ether or ester functional groups (1:60-68). Reference 068 also teaches that the non-hydrolyzable groups may contain functional groups (8:65-10:33 and 11:20-60).

With respect to claims 9, 20, and 25, both references 988 and 068 teach that the composite coating composition is clear (988, 1:47 and 9:6; 068, 21:13-57).

With respect to claim 10, reference 068 refers to the composite coating composition as "mar-resistant" (1:10) while reference 988 refers to the coating having a "high toughness" (1:46).

With respect to claims 11, 12, 17, 18, 24, 25, and 27-32 both references 988 and 068 teach that the composite coating composition is applied to a substrate in at least one coat as an automotive, industrial, or plastic coating (988, 1:1-42; 068, 21:13-57).

With respect to claims 13 and 24, both references teach applying the composite coating compositions to surfaces and curing them. In particular, reference 068 teaches that the composition may be used as a paint top-coating or as an automotive electrodeposition coat (21:13-51). Although neither reference teaches that the coating composition is applied and cured atop a paint system, it is well known that, in applications such as those cited above, multi-layer coatings are common, with the top or electrodeposition coat coated and cured atop other paint layers. Consequently, it would have been obvious to one of ordinary skill in the art, in using the composite coating compositions according to the suggestion of reference 068, to have applied and cured it atop a paint system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

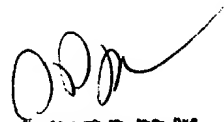
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (571) 272-1419. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

WPF 1/15/2004
William P. Fletcher III
Examiner
Art Unit 1762


SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700